

REMARKS

Preliminarily, Applicants respectfully request the Group Director to withdraw and vacate the Final Office Action of March 16, 2006 and to honor the Request for Suspension of Action filed March 2, 2006. A Request for Withdrawal of Finality of Office Action was filed on April 10, 2006.

The elected species is Fig. 8(d).

Particularly, this is embodiment (iv) of claim 1, where "the thrust dynamic-pressure gap definition surface of the second member which faces the thrust plate is crowned such that an inner circumferential portion thereof projects by an amount greater than 0 μm and not greater than 2.5 μm with respect to an outermost circumferential portion thereof".

Independent claim 1 (ceramic dynamic-pressure bearing) and independent claim 15 (hard disk drive) have been amended to recite that the ceramic dynamic-pressure bearing satisfies at least one of conditions (i) to (iii) and at least one of conditions (iv) and (v). Claims 29-42 including both elected and non-elected subject matter have been canceled without prejudice. Applicants reserve the right to file a Continuation and/or Divisional application directed to the canceled subject matter.

As specified by new claim 43, each of the thrust dynamic-pressure gap definition surface of the second member which faces the thrust plate and the thrust dynamic-pressure gap definition surface of the thrust plate which faces the second member has a total flatness of not greater than 3 μm . New claim 43 corresponds to canceled claim 31. New claim 44 is directed to a hard disk drive comprising the ceramic dynamic-pressure bearing of claim 43.

As required by new independent claim 45, the ceramic dynamic-pressure bearing satisfies at least one of conditions (i) to (iii) and at least one of conditions (iv), (v) and (vii). Condition (vii) requires a clearance between mutually facing thrust dynamic-pressure gap definition surfaces of the second member and each of the first and second thrust plates. Condition (vi) of original claim 1 requires the clearance to be present between one of the thrust plates and the second member, whereas condition (vii), as shown in Fig. 8, requires such clearance between both first and second thrust plates and the second member. New claim 46 is directed to a hard disk drive comprising the ceramic dynamic-pressure bearing of claim 45.

New claims 47 and 48 depending on claims 1 and 15, respectively, recite that the ceramic dynamic-pressure bearing satisfies all of conditions (i) to (v). New claim 29 depending from claim 45 recites that the ceramic dynamic-pressure bearing satisfies all of conditions (i) to (v) and (vii).

Review and reconsideration on the merits are requested.

Claims 1-2, 14, 29-31, 34, 41 and 42 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,688,053 to Itoh et al. Claims 3-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Itoh et al. in view of NIST Property Data Summaries. Claims 15, 16, 28, 32, 35-38 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Itoh et al., in view of Jabbar et al. Claims 17-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Itoh et al. in view of Jabbar et al., in further view of NIST Property Data Summaries.

The Examiner relied on Itoh et al. as disclosing a ceramic dynamic-pressure bearing substantially as claimed, and which was said to satisfy requirements (i), (ii), (iii) and (iv) of

claim 1. The Examiner cited NIST Property Data Summaries with respect to ceramic composition, properties and crystal structure. The Examiner relied on Jabbar et al. with respect to use of a thrust bearing in a hard disk drive.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendment to the claims and the following remarks.

In prosecution to date, Applicants distinguished the claimed bearing where one or both of the gap definition surfaces has a "flatness of not greater than 3 μm " from the pressure bearing of Itoh et al., where one of the gap definition surfaces is a rough surface and the other is a smooth surface having a center-line mean roughness Ra of less than 0.3 (Abstract). Applicants' position continues to be that the center-line mean roughness is a different parameter and therefore does not disclose the claimed flatness of not greater than 3 μm .

In order to advance prosecution, and without conceding that the smooth surface of Itoh et al. is within the claimed flatness of not greater than 3 μm , Applicants present herein amended claims 1 and 15 and new claims 43-46 for examination. Claims 1 and 15 limit the ceramic dynamic-pressure bearing to one which satisfies at least one of condition (i) to (iii) and at least one of conditions (iv) and (v). Neither Itoh et al. nor any of the other cited prior art discloses a dynamic pressure bearing of claims 1 and 15 satisfying condition (iv) or (v) where a gap definition surface of the second member or thrust plate is crowned as shown, for example, in Figs. 8(d) and (e). To the contrary, each of the drawings of Itoh et al. shows parallel gap definition surfaces, for example, the parallel gap definition surface defined by the lower surface of thrust bearing 109 and upper counterface 111 of rotor 107. This difference is also acknowledged at page 3 of the Office Action. Therefore, it is respectfully submitted that claims

1 and 15 and claims 2-14 and 47 and claims 16-28 and 48 depending therefrom are patentable over Itoh et al., alone or in view of NIST Property Data Summaries and the Jabbar et al. reference.

As claimed in independent claim 43, each of the thrust dynamic-pressure gap definition surface of the second member which faces the thrust plate and the thrust dynamic-pressure gap definition surface of the thrust plate which faces the second member has a total flatness of not greater than 3 μm . Claim 43 patentably distinguishes over Itoh et al., where one of the gap definition surfaces is a rough surface having a center-line mean roughness Ra of not less than 0.3 (for example, counterfaces 11A and 11C of Fig. 3 or the inwardly facing surfaces of thrust bearings 103 and 109 of Fig. 4) and a surface facing the rough surface is a smooth surface (for example, inwardly facing surfaces of thrust bearings 103 and 109 of Fig. 3 and upper and lower counter surfaces of rotor 107 of Fig. 4) having a center-line mean roughness Ra of less than 0.3 (Abstract). That is, as defined in new claim 43, both (i.e., each of) the gap definition surfaces are defined as having a flatness of not greater than 3 μm , in contrast to Itoh et al., where one surface is rough and one surface is smooth. This embodiment of the invention is also not disclosed by NIST Property Data Summaries and the Jabbar et al. reference. Thus, it is respectfully submitted that claim 43 and claim 44 directed to a hard disk drive including all of the limitations of claim 43 are also patentable over the cited prior art.

New independent claim 45 is directed to a ceramic dynamic-pressure bearing which satisfies at least one of conditions (i) to (iii) and at least one of conditions (iv), (v) and (vii). Claim 45 is similar to original claim 1, but differs in that condition (vii) requires a clearance

between the mutually facing thrust dynamic-pressure gap definition surfaces of the second member and each of the first and second thrust plates.

The Examiner considered Itoh et al. as satisfying at least one of conditions (i) to (iii) relating to flatness, and as meeting condition (vi) of original claim 1. The Examiner is correct as to condition (vi) of original claim 1 which only required a clearance between one of the thrust plates and the second member. For example, Fig. 3 of Itoh et al. shows a gap between upper thrust plate 109 and second member 107 at an outermost circumferential portion, but not between lower thrust plate 103 and second member 107. New claim 45 differs from Itoh et al. as requiring that such clearance be present between both first and second thrust plates and the second member. That is, condition (vii) of claim 45 requires a clearance between both of the first and second thrust plates and the second member, to thereby patentably distinguish over Itoh et al. which shows no more than a single gap between upper thrust plate 109 and second member 107 at an outermost circumferential portion thereof.

New claims 46 and 49 including all of the limitations of claim 45 are patentable for the same reasons that claim 45 is patentable over the prior art.

For the above reasons, it is respectfully submitted that the claims presented herein are patentable over the cited prior art, and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 1-28 and 43-49 is earnestly solicited.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/090,267

Q68736

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Abraham J. Rosner
Registration No. 33,276

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: June 9, 2006